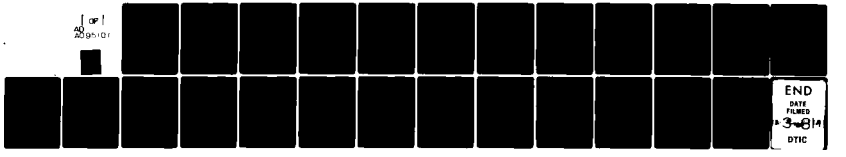
AD-A095 101 CORPS OF ENGINEERS SEATTLE WASH SEATTLE DISTRICT F/G 5/2
IN-HOUSE INFORMATION SYSTEM (IHIS) STUDY/PROJECT REPORT.(U)
OCT 80 E M TRAXEL, M K PRITCHARD, N E TAGHON

UNCLASSIFIED NL



# IN-HOUSE INFORMATION SYSTEM (IHIS)

October 1980

STUDY/PROJECT REPORT



ELLEN TRAXEL, PROJECT MANAGER

MARY PRITCHARD, STUDY MANAGER

NANCY TAGHON, DATABASE MANAGER



Seattle District, Corps of Engineers

Seattle, Washington

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

| REPORT DOCUMENTATION PAGE | | READ INSTRUCTIONS BEFORE COMPLETING FORM |
|---|---|---|
| 1. REPORT NUMBER | 2. GOVT ACCESSION NO. AD-A095101 | 3. RECIPIENT'S CATALOG NUMBER |
| 4. TITLE (and Subtitle) IN-HOUSE INFORMATION SYSTEM (IHIS): Study/Project Report. | | 5. TYPE OF REPORT & PERIOD COVERED FINAL<br>6. PERFORMING ORG. REPORT NUMBER |
| 7. AUTHOR(s) Ellen M. Traxel; Mary K. Pritchard; Nancy E. Taghon | | 8. CONTRACT OR GRANT NUMBER(s) |
| 9. PERFORMING ORGANIZATION NAME AND ADDRESS US Army Corps of Engineers. Seattle District PO Box C-3755. 4735 E. Marginal Way S. Seattle, WA 98124 | | 10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS |
| 11. CONTROLLING OFFICE NAME AND ADDRESS | | 12. REPORT DATE October 1980<br>13. NUMBER OF PAGES 23 |
| 14. MONITORING AGENCY NAME & ADDRESS(if different from Controlling Office) | | 15. SECURITY CLASS. (of this report) Unclassified<br>15a. DECLASSIFICATION/DOWNGRADING SCHEDULE |

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution unlimited.

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Information science; information retrieval; data processing; information systems; FAMULUS; 410076

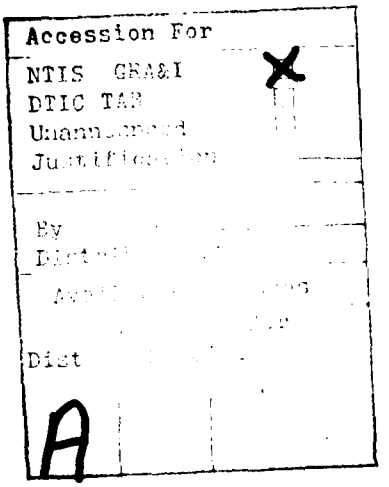
20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Lack of a systematic information policy in the Seattle District Army Corps of Engineers resulted in inefficient use of internal information and staff time. After the problem was analyzed by the District's library staff, an in-house computerized information storage and retrieval system was tested. A sample of in-house reports was indexed and input into the local Harris computer utilizing FAMULUS software. The final analysis of the sample determined that the FAMULUS software was insufficient to manipulate the large file. The study

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

20. team recommended that the purchase of large file, bibliographic oriented software be made to allow a larger file size and more sophisticated searching capabilities.



IHIS PROJECT REPORT

## PREFACE

"Information conserves other resources through improved decisions."[1]

What is information worth? The right information can be the most important thing agency leaders can have. It can mean the difference between a good decision and a bad one. However, only rarely do agencies take the steps necessary to fully conserve this valuable resource.

[1] Dr. John Richardson, U.S. Department of Commerce, ACM 70 Conference 1970.

IHIS PROJECT REPORT

TABLE OF CONTENTS

IHIS PROJECT REPORT

## PART I: IN-HOUSE INFORMATION SYSTEM STUDY

### 1. CURRENT SITUATION

This study describes the information situation within the Seattle District Corps of Engineers as it existed from November 1978 to March 1980.

#### a. PRODUCTION

The Seattle District produces a variety of materials in the accomplishment of their mission. For this report, we have only studied materials relating to the Engineering function of the District. (See Appendix A: Materials Examined for IHIS Study.)

There is no single regulation governing the format, contents, and initial distribution, etc. of Corps generated reports. (See Apendix B: Some Regulations Governing Writing of Local Reports.)

No policy currently exists on a local or national level regarding indexing, storage and retrieval of these materials. Locally generated reports and data are handled in a haphazard manner and are often unretrievable shortly after their generation.

#### b. INDEXING

There is no single method of finding out what information materials exist in the District Office. Many people rely on hearsay or the memories of present long-time employees. Materials are scattered throughout the various branches and sections. There has been some effort to centralize reports, maps, and engineering drawings in Engineering Division, Service Branch, however, their collection is far from complete, and only goes back 10 years at most. Any information older than 10 years could be anywhere throughout the District; it could have been destroyed long ago, or it may never have existed. Many branches try to index or organize their materials in some manner. However, employees outside the branch/section are generally unaware that any system exists.

#### c. RETENTION/STORAGE

(1) Material location is not controlled. They are found throughout the branches and divisions of the Corps District. Engineering Division alone has over eight different formal locations for in-house materials. Many employees simply retain those items which they feel are essential to their work. With no central responsible employee or entity, material (some one-of-a-kind items) can be lost or misplaced permanently.

(2) If the branch does provide file supervision, the employees decide which materials to keep, how long to keep them and when to transfer them to the Records Holding Area. In this case, material retention depends on the judgment of the present employee(s) in charge of the files and may change with these employees.

d. RETRIEVAL

(1) Few branches provide enough file supervision to insure that materials are retained and not permanently borrowed. No listing exists to tell what material is available. If information is over 10 years old, it is usually irretrievable. Attitudes toward inter-office resource sharing are poor because there is no functioning system which will guarantee that the information will be available when needed.

(2) Important documents disappear regularly and searching is avoided at all costs.

2. CONSEQUENCES OF THE LACK OF INFORMATION POLICY.

As delineated above, the present situation is extremely costly and affects many aspects of the Corps' general efficiency.

a. Duplication of effort occurs throughout the District Office as managerial planning and clerical tasks concerning document maintenance functions are assumed by many different sections. Due to the lack of centralization, documents are indexed, stored and retrieved more often than necessary.

b. The manual search and retrieval methods required are time-consuming. With no centralized indexing system, it is difficult for the employees to know what type of resources are available or if they even exist. The different methods of material organization among branches requires knowledge of each indexing system to be searched effectively. Since background material on past projects is ineffectively organized, District employees lead long, frustrating searches. Wasted employee time means wasted Government money.

c. If the searches are too long and frustrating, the researcher may avoid any subsequent searching, especially if his/her efforts were fruitless. Even more costly than a time-consuming search, may be the duplication of work because documents reporting a similar project cannot be found.

d. Every time District employees cannot locate our own documents or cannot amass necessary data an unresponsive, inefficient attitude is transmitted to the public and to Corps' employees.

e. Finally, lack of information results in a passive and reactive organization. Future trends or opportunities cannot be anticipated, if the employees haven't got the right information.

3. GOAL

Establishment of a coordinated information handling system to reduce Corps costs, improve employee productivity and public relations, and ultimately produce a more active and responsive organization.

4. RECOMMENDATIONS TO IMPROVE AND STANDARDIZE DOCUMENT HANDLING The procedures recommended in this report emphasize maximum utilization of existing systems and services, to provide the greatest impact at the least cost to the Corps.

Different types of information cannot be handled in the same manner. Full-text databases, bibliographic databases, computer graphics and statistical databases are possibilities which can be combined to handle the various types of information. Decisions made in this area must first take into account the type of information involved.

a. REPORTS require at least two control systems: (1) a bibliographic database to search to determine if information exists on a subject (an index to the collection) and (2) the text of the document retained in hard copy, microform, or machine-readable form.

(1) Bibliographic Database

A bibliographic database allows the searcher to retrieve relevant citations to reports on the subject or geographic area in which he/she is interested. The searcher can obtain a list of citations from the database through multiple access points (i.e., report number, title, location of report, project name or geographic area). Also, from this printout the searcher knows what was available and is able to choose from this list the materials he/she needed and then examine only those items. Such a database can be constructed in two ways: (1) by building a local bibliographic database, or (2) by submitting all locally produced documents to the Defense Technical Information Center (DTIC) for inclusion in their DROLS database system.

In the Seattle District, we have chosen the use of both methods. A local bibliographic database has been built for our retrospective reports. Our current and future reports will be sent to DTIC for inclusion in their database.

(2) Document Retention The text of the actual document can be retained in hard copy, microform or machine-readable form.

(a) Hard Copy.

A limited supply of hard copy documents can be kept locally until microforms are available. Since the District's own reports are most often needed locally, they should be retained locally.

(b) Microfiche

When locally produced reports are sent to DTIC for inclusion in their database, the Districts, Division, and Headquarters can all keep copies of these reports in microfiche. The DTIC database can be used as an index and permanent repository for Corps of Engineers reports. Distribution of the reports can be limited under necessary circumstances.

(c) On-Line Full-Text Database

The next step would be to have the full-text of the reports on-line. Because of the expanding use of Word Processing equipment within the Corps, it seems natural that some interface between Word Processing equipment and local or centralized computer systems could make these documents totally on-line, full-text retrievable in the near future. The reports now contained on the Word Processing equipment could be the beginning of the full-text database. Together, the databases would give the Corps control over and accessibility to its reports. If the reports are on-line full-text, one need only go from the bibliographic database to the full-text database for the report; the report would be as close as the nearest terminal. Software capable of manipulating a full-text database of this potential size would have to be acquired in order to do this. Many of the legal database systems have such software already.

b. DATA

(1) Cartographic Data

Locally generated maps and engineering drawings could be easily retained if they are converted to aperture card microformat. But in addition to this, forms of computer graphics should be investigated.

IHIS PROJECT REPORT

The National Cartographic Information Center (NCIC), established by the U.S. Geological Survey, Department of the Interior, in July 1974, provides a national information service to make cartographic data of the United States easily accessible to the public and to various Federal, State, and local agencies. At present, more than 30 Federal agencies collect and prepare cartographic data. The cartographic data include maps and charts, aerial photography, geodetic control data, and map data in digital form. For further information, write to the National Cartographic Information Center, U.S. Geological Survey, 507 National Center, Reston, Virginia 22092, or call (703) 860-6045.

(2) Hydrologic Data

The Geological Survey and the Environmental Protection Agency already collect and monitor water data. The Corps could input any additional data needed for its operations into these existing databanks or contract with the databank agency to do this. Since the systems already exist to handle this data, the Corps should emphasize development of software to effectively analyze the data from these systems.

(a) U.S. Geological Survey Databanks

(1) Water Data Storage and Retrieval System (WATSTORE)

The U.S. Geological Survey, through its Water Resources Division, investigates the occurrence, quantity, quality, distribution, and movement of the surface and underground waters that comprise the Nation's water resources. It is the principal Federal water-data agency and, as such, collects and disseminates about 70 percent of the water data currently being used by numerous State, local, private, and other Federal agencies to develop and manage our water resources. As part of the Geological Survey's prior program of releasing water data to the public, a large-scale computerized system has been developed for the storage and retrieval of water data collected through its activities. General inquiries about WATSTORE may be directed to: Chief Hydrologist, U.S. Geological Survey, 437 National Center, Reston, Virginia 22092.

(2) National Water Data Exchange (NAWDEX) has been established to help users of water data to locate and acquire needed data. NAWDEX is not a large depository of water data. Rather, its objective is to provide the user with sufficient information to define what data are available, where these data may be obtained, in what form the data are available, and some of the major characteristics of the data. Requests for services or additional information related to the NAWDEX program may be directed to: National Water Data Exchange, U.S. Geological Survey, 421 National Center, Reston, Virginia 22092, Telephone: (703) 860-6031, (FTS) 928-6031.

b. U.S. Environmental Protection Agency

STORET is a computerized data base utility maintained by EPA for the STOrage and RETrieval of parametric data relating to the quality of the waterways of the United States. For further information, contact STORET User Assistance, Washington, D.C. Telephone: (202) 426-7792 or (800) 424-9067.

c. CHROMS is the North Pacific Division (NPD) Corps of Engineers Hydrologic-Meteorological monitoring system. Hydrologic and Meteorological data from NPD Corps projects is collected, monitored and compiled on a continuing basis so that the Districts/Division can monitor activities at its projects. For further information, contact Richard McLaughlin, NPSEN-HH-WM, telephone (206) 764-3544 or FTS 399-3544.

(3) ENGINEERING DATA

The Government-Industry Data Exchange Program (GIDEP) is a cooperative data exchange among Government and industry participants seeking to reduce or eliminate expenditures of time and money and improve system reliability by making maximum use of existing knowledge. The program provides a means to automatically exchange certain types of data essential in the research, design, development, production, and operational life cycle of systems and equipment.

Detailed participation requirements of additional information concerning the GIDEP data interchanges may be obtained by contacting the Officer-in-Charge, GIDEP Operations Center, Corona, California 91720, Telephone: (714) 736-4677; Autovon: 933-4677. The GIDEP database has recently become available on the Department of Energy's RECON System.

## 5. CONCLUSION

As one can see, there are a large number of existing Federal information systems which the Corps could use to centralize and broaden its access to its own and other Federal agency data.

IHIS PROJECT REPORT

## PART II: IN-HOUSE BIBLIOGRAPHIC DATABASE - DEMONSTRATION PROJECT

From March to December 1980, an In-House bibliographic database of local District reports was created. This database can be searched on the initiation of projects to determine what has been done locally in a particular geographic area or on a particular project.

### 1. SCOPE

This initial study was limited to reports from Engineering Division which support the Corps' engineering function. For a listing of the types of reports included see Appendix C: Document Type Codes.

The files in the Service Branch of the Engineering Division contained eighty-eight drawers of files of local reports most of them produced within the last 10 years. It was estimated at the beginning of the project that approximately 1300 such reports existed.

### 2. HARDWARE AND SOFTWARE

a. HARRIS HARDWARE. Harris was chosen because it was available locally and inexpensive.

b. FAMULUS PROGRAM. After reviewing suitable software compatible with the Harris computer, the FAMULUS program was selected due to its low cost and flexibility. Other software studied included: NASA RECON/STIMS, BIBSYS, NIPS, CADMAT, LIRS ASRES-ASRDI, Battelle BASIS, Aspen Systems, Lockheed DIALOG, Cullinane DBMS, SYSTEM 2000, TOTAL and QL Information Retrieval System. These programs required either a large capital investment or could not be used on available computers.

The FAMULUS program was developed by the U.S. Forest Service in the late '60s as a documentation system for researchers. It allows records to be sorted on any combination of fields for hard copy printouts. The system can be searched interactively with user-assigned search terms, on any or all record fields with boolean operators. This capability enables retrieval of citations on any subject or geographic locations or by title, corporate source, etc. Records could be input on-line through the FAMENTER program, thereby eliminating any coding. For a further breakdown of FAMULUS capabilities, see Appendix D.

### 3. RECORD FORMAT

A format was developed to provide identifying information for each report. Appendix E explains the formation of each data element. Since the computer only recognizes strings of characters, consistency in spacing, punctuation, spelling, and uniformity of indexing were stressed to increase the efficiency of the system.

IHIS PROJECT REPORT

(RN) Report Number Field contains the unique number assigned by the database manager for each report following ANSI Standard Z39.23-1974. For example, CE/NPS/DES-77/0001 stands for Corps of Engineers/North Pacific Seattle District/ the Document Type Code - (two digits for the year)/(four digits for a consecutively assigned number for each year). The only exceptions to this were WES reports and House and Senate documents. In these cases, the WES report number or the House/Senate document number was used.

(LO) Location Field contains the mailstop and drawer number in which the document is filed. NPSEN-SV; DW88 is the Service Branch mailstop and drawer number 88.

The first two codes in the RN and LO Fields were constant. To save input time, this information was machine-assigned after the file was completed.

(TI) Title Field. The report name or location introduces this field. The type of report follows separated from the report name by "space colon space."

(DA) Date Field. The date appears in numbers, the first two signify the year, the second two, the month, and the last two, the day, i.e., YYMMDD.

(NT) Note Field. This field includes pagination and descriptive notes, telling whether maps, graphs, appendices, or a bibliography, is included.

(GE) Geographic Field. This field contains geographic names like cities, towns, rivers, project names, and zip code designations. The semicolon (;) is used as a delimiter. The plus sign (+) was added to the end of major descriptors to identify primary geographic areas or projects. Use of this symbol enhances the precision of search results. A Project/Geographic Authority List was developed during the input process.

(NO) Number Field. The USGS Basin numbers and county codes were machine generated from GE Field descriptors.

(DT) Document Type Field. The document type was also machine generated through a conversion index from the three-letter document code in the RN field. See Appendix C: Document Type Codes.

4. FILE BUILDING

The database manager scrutinized eighty-eight drawers of files in Service Branch of the Engineering Division. For each report, she recorded pagination and geographic and/or project names.

The FAMENTER program facilitated loading the bibliographic information into the local Harris computer. The program displayed prompts for each field of a record, data was input and a Harris work file was created. The database manager subsequently stored, combined, and finally transferred the file into FAMULUS.

The Database Manager continually reviewed records for uniform entry, authority of descriptors and accuracy. The FAMULUS capability to generate an index of the Geographic field, allowed the manager to obtain an index periodically for on-going creation and clean-up of the authority list of place names and project names. A record of the Document Type Codes used in the RN Field and their corresponding designations was maintained throughout the project, which ultimately resulted in the Document Type Codes (Appendix C).

When input was complete, the database manager prepared a conversion index for the cleaned-up authority list for both the Geographic Field and the Document Type Codes of the final file. From the GE conversion index, she assigned county codes and basin codes to generate the NO field. In a similar manner, the DT (Document Type) Field was produced from the RN (Report Number) Field.

## 5. MAINTENANCE

New records are not added to the retrospective information file. Instead the bibliographic data from new reports is submitted to DTIC for inclusion in the Defense RDT&E on-line system (DROLS). (See Appendix F: DTIC local regulation.) The DTIC liaison in the District Library reviews and edits the DD1473's and sends the reports to DTIC.

Submitted reports are available for searching on the DROLS bibliographic database and the text of the report is available in microfiche and on paper copy.

## 6. SYSTEM EVALUATION

a. The local Harris 120 Computing System performed unreliably. Almost routinely, it went down during the input processing, permanently losing new data. After 2 weeks downtime, when the Harris underwent extensive repairs, the System's dependability increased substantially.

b. Famulus Software is limited by its batch system origins. The command language, geared for card input, is very cumbersome for online interactive usage. At least five consecutive commands are required in order to execute any operation. Errors occurring during the execution of commands cannot be corrected, and the multi-step command must be reentered in full.

Editing is awkward with Harris and FAMULUS. There is no global editing feature in Harris. In FAMULUS, one has to produce a card deck of corrections to merge with the original file to do global editing. Once a line has been sent during the Harris input process, it is very difficult to make corrections. Harris has an eighty-one character line and if corrections are needed subsequent lines in the same field may also have to be changed.

As mentioned before, FAMULUS requires a long chain of commands in order to edit and another long chain of commands to make sure the editing has been done properly. The lesson is simple--never make a mistake!

An additional problem of the FAMULUS software is the file size limitation which was not discovered until we exceeded the program capacity of 750 records. If this limit cannot be overcome by in-house ADP personnel, the IHIS file will have to consist of several files instead of one combined file. To search all reports would require an independent search on each file which would be rather inconvenient.

Finally, another retrieval problem with the FAMULUS software is the automatic truncation in the search mode. This problem causes numerous false drops. For example, when searching DAM, it will retrieve DAMP, DAMAGE, DAMN,, etc.

## 7. RECOMMENDATION

Purchase software which will allow a larger file size, ease of editing, a more sophisticated searching capability, and more flexibility, in general.

Without access to suitable software, construction of any type of "user friendly" bibliographic database is almost impossible.

APPENDIX A: MATERIALS EXAMINED FOR IHIS STUDY

| SECTION | MATERIAL TYPE | APPROXIMATE NO. | BIBLIOGRAPHIC NO. |
|---|---|---|---|
| Service Branch | Reports * | 800-900 | 800-900 |
| | Design Memos | 400 | 400 |
| | Charts | 500 | 450-500 |
| | Viewgraphs | 1,600 | 1,200 |
| | Other * | 1,200 | 1,000 |
| Map Records | Engineering Drawings | 24,000 | 5,000-10,000 |
| | Water Surface Profiles | 3,000 | 3,000 |
| Survey-Photo-grammetry | Photos * | 4,400 | 4,000 |
| | Topographic maps | 450 | 450 |
| Survey-Computation | Fieldbooks | 3,250 | 3,250 |
| | Profile points | 11,000 | 2,800 |
| H & H | Bridge data | 2,000 | 2,000 |
| | Cross sections | 2,000 | 2,000 |
| | Frequency curves | 1,000 | 1,000 |
| TOTAL | | | 27,150-32,300 |

---

* Reports: Advanced engineering & design reports
Beach erosion control studies
Comprehensive basin studies
Continuing authority studies
Environmental impact statements
Flood control studies
Flood insurance studies
Flood plain reports
Historical flood studies
Navigations studies
Special studies
Miscellaneous

Other *:
Congressional Documents
Public Information - hearings
brochures

Photos *: Aerial flood photos
Control photos
Reconnaissance photos
Surveillance photos

IHIS PROJECT REPORT

APPENDIX B: SOME REGULATIONS GOVERNING WRITING OF LOCAL REPORTS

| Document Type | | Authority |
|---|---|---|
| Aquatic Plant Studies | | ER 1130-2-412<br>28 May 76 |
| Authorization Reports | | ER 1105-2-903 |
| Beach Erosion Control | | EM 1110-2-3300 |
| COE Annual Report | | ER 335-2-5<br>ER 1105-2-302 |
| Continuing Authorities Program | | ER 1105-2-50<br>3 Nov 75 |
| Coordination of Reports | | NPSEN SOP 1<br>10 Sep 76 |
| Cultural Resources | | ER 1105-2-460 |
| Dam Safety Phase I Inspection Reports | | EC 1110-2-188<br>30 Dec 77 App. E |
| Design Memorandums | | EC 1110-2-193<br>20 Apr 79 App. A |
| District Engineer Review of Reports | | NPSEN SOP 2<br>10 Sep 76 |
| Embankment Criteria & Performance Report | | ER 1110-2-1901 |
| Environmental Impact Statements | | Draft ER 200-2-2 |
| Feasibility Reports | Format | ER 1105-2-403 (I) |
| | Content | ER 1105-2-920 (?) |
| Forms & Reports Control (Ch 1-6) | | ER 405-1-11 |
| Guidelines for Assessment of Economic, Social and Environmental Effects of Civil Works Projects | | ER 1105-2-105 |

IHIS PROJECT REPORT

| Document Type (con.) | Authority (con.) |
|---|---|
| Hydropower Reports | EM 1110-2-1701 |
| Major Rehabilitation | ER 1130-2-417 |
| Manuals | ER 1130-2-304 |
| Master Plans | ER 1130-2-410 & Changes |
| Planning Reports | ER 1105-2-401 |
| Post Authorization Studies Phase II Draft | EC 1110-2-193 |
| Post-Authorization Studies - Phase II | ER 1110-2-1150 20 Apr 79 |
| Preparation of Post-Authorization Reports | NPSEN SOP 4 5 Dec 79 |
| Preparation and Coordination of Environmental Statements | ER 1105-2-507, 15 Apr 74, superseded by ER 200-2-1 dtd 27 Jun 79 |
| Publication within OCE | OM 310-1-4 |
| Recreation Reports | ER 1130-2-409 |
| Special Flood Hazard Info Reports (Distribution) | EP 1165-2-302 EP 1165-2-303 |
| Survey Investigation and Reports - General Procedures | EM 1120-2-101 Jun 1956 |

## APPENDIX C: DOCUMENT TYPE CODES

### REPORTS

| | |
|---|---|
| APR | Appraisal Report |
| ARC | Archaeological Reconnaissance |
| ATR | Architectural Treatment Report |
| BBL | Bibliography |
| BEC | Beach Erosion Control |
| BPI | Basic Project Information |
| CAU | Continuing Authority |
| CBS | Comprehensive Basin Study |
| CIR | Community Impact Report |
| CKP | Checkpoint 1 Report |
| CNP | Construction Progress |
| CPT | Concept Study |
| DMR | Damage Reduction |
| DFP | Definite Project Report |
| DAN | Design Analysis |
| DMO | Design Memorandum |
| DPR | Detailed Project Report |
| DES | Draft EIS |
| EIS | Environmental Impact Statement |
| EVA | Environmental Assessment |
| EXC | Baseline Study/Existing Conditions Report |
| FES | Feasibility Report |
| FRC | Field Reconnaissance |
| FSW | Fish & Wildlife Report |
| FLC | Flood Control |
| FLH | Flood Hazard |
| FIS | Flood Insurance Study |
| FLP | Flood Plain |
| FND | Foundation Report |
| GDM | General Design Memorandum |
| GEO | Geology Report |
| HFL | Historical Flood |
| HMS | Hydraulic Model Study |
| ICR | Incident Report |
| IDX | Index |
| INF | Information Bulletin |
| JSR | Justification Report |
| LIM | Limnology Study |
| LWR | Land & Water Resource Study |
| LTR | Letter Report |
| MDD | Debris Disposal Method Study |
| MTL | Materials Investigation |
| NVS | Navigation Study |
| OMM | Operations & Maintenance Manual |
| OPR | Operations Report |
| PDV | Potential Development Report |
| PIM | Potential Impact Report |
| PLS | Plan of Survey |
| PEX | Potential Expansion |
| PNR | Planning Report |
| PRE | Preliminary Examination Report |
| PRG | Progress Report |
| PST | Plan of Study |
| RCR | Reactivation Report |
| REC | Recreation Report |
| RLR | Relocation Report |
| RSM | Reservoir Regulation Manual |
| RVR | Review of Report |
| RRD | Run of River Development |
| SOI | Soil Investigation Report |
| SPS | Special Study |
| SRR | Survey/Review Report |
| STB | Structural Behavior |
| THY | Tidal Hydraulics Report |
| TIM | Time Study |
| TRM | Termination Report |
| TYR | Treaty Report |
| WIS | Wild & Scenic River Study |
| WMS | Potential Wildlife Mitigation Site Evaluation |
| WQR | Water Quality Report |
| WRS | Water Resource Survey |
| WTI | Wetlands Inventory |

IHIS PROJECT REPORT

PUBLIC INFORMATION

| | |
|---|---|
| ADS | Address |
| DCB | Data for Conference Briefing |
| MIN | Minutes |
| PRC | Proceedings |
| PBW | Public Workshop |
| PBH | Public Hearing |
| PBB | Public Brochure |
| PAM | Pamphlet |

ECONOMIC DATA

| | |
|---|---|
| COS | Cost Estimate |
| ECA | Economic Analysis |
| ECD | Economic Development |

DESIGN/CONSTRUCTION

| | |
|---|---|
| DAN | Design Analysis |
| DMO | Design Memorandum |
| PIR | Pilot Repair |
| PEX | Potential Expansion Report |

LEGISLATIVE

| | |
|---|---|
| CON | Congressional Document |
| COH | Congressional Hearing |
| HDC | House Document |
| SCP | Senate Committee Print |
| SDC | Senate Document |

## APPENDIX D: FAMULUS SEARCH PROGRAM CAPABILITIES

| FEATURE DESCRIPTION | |
|---|---|
| a. User control and interaction: | |
| (1) Online instruction (e.g., user-initiated HELP and EXPLAIN commands) | No |
| (2) Online database descriptions and search field display | No |
| (3) Clear prompting for user input (so user knows when and what choices are offered) | No |
| (4) Simplicity of entry format | No |
| (5) Error messages (with enough explanation for user to understand and correct the problem) | Yes |
| b. Search input and processing: | |
| (1) Direct entry of Boolean logic and search terms in one step | Yes |
| (2) Availability of previous "sets" for further use in search statement | Partial |
| (3) Online display of dictionary | Yes (Index program) |
| (4) Nested logic (e.g., using parentheses) | Yes |
| (5) Truncation | Automatic |
| (6) Direct searching of all relevant fields in the record | Yes |
| (7) User control of fields searched | Yes |
| (8) Ability to search multiword terms | GE field only |
| (9) Direct search for single words within multiword terms | Yes |
| (10) Sequential searching of print file | Yes |
| (11) System repeat of terms with no postings | No |
| (12) Online display of search history | Yes |

APPENDIX D: FAMULUS SEARCH PROGRAM CAPABILITIES (con.)

FEATURE DESCRIPTION (con.)

c. Display and output of results:

| | | |
|---|---|---|
| (1) | Predetermined print formats | Yes |
| (2) | Online specification of print format | Yes |
| (3) | Ability to print from any set created during the search | No |
| (4) | Ability to print selected items from within a set | Yes |
| (5) | Ranked output | No |
| (6) | Sequential numbering of items in printout | No |
| (7) | Labeling of fields in printout | Optional |
| (8) | Offline printing | Yes |

List of features taken from: Boyle, Stephen O. and Miller, A. Patricia, "Feature Comparison of an In-House Information Retrieval System with a Commercial Search Service" Journal of the American Society For Information Science, v. 31, #5, September 1980, Table 4.

## APPENDIX E: RECORD FORMAT

| FIELD ABBREVIATION | FIELD NAME | STANDARD |
|---|---|---|
| RN | Report number<br>EXAMPLE:<br>CE/NPS/DES-77/0001 | ANSI Z39.23-1974<br>PB277 951 p. 38 |
| LO | Mailstop<br><br>NPSEN-SV; DW88<br><br>Machine assigned | Seattle District<br>Phone Book |
| TI | Title | PB277 951 p. 27-29 |
| DA | Date | YYMMDD<br><br>781030 |
| .GE | Project names<br><br>Geographical names<br>Cities, towns,<br>rivers,<br>Ex: GRAYS HARBOR<br>LIBBY MT | Project/Geographic Authority List<br><br>Uniform name with zip code for States other than WA |
| NO | Number<br>Machine assigned from Geographic field<br>Basin #; county codes<br>River miles, etc.<br>Longitude & latitude | |
| DT | Document type<br><br>Machine assign according to report number | PB277 951 p. 38 + our list |

IHIS PROJECT REPORT

APPENDIX F: DTIC LOCAL REGULATION

DEPARTMENT OF THE ARMY
Seattle District, Corps of Engineers
P.O. Box C-3755
Seattle, Washington 98124

NPSOM 5-1-2

NPSAS-L

Office Memorandum
No. 5-1-2

October 1980

Management
SUBMITTING DISTRICT REPORTS TO THE
*DEFENSE TECHNICAL INFORMATION CENTER (DTIC)*

1. Purpose. Establish policies and prescribe procedures for the Seattle District to submit local reports and contract reports to DTIC.

2. Reference. AR 70-31
AR 70-45
ER 1105-2-920
MIL STD 847A
ER 5-1-4, App. F
DD 1473
DARS 4.2111

3. Applicability. It applies to all Seattle District elements that direct, administer, perform or support research, development, test and evaluation in all RDT&E categories. Technical information needed for or resulting from engineering studies or scientific investigations related to military construction and civil works is included. Excluded are local circulars, pamphlets, manuals, office memorandums, etc., that are indexed in the NPSP 310-1-1 and design memorandums.

4. Procedures.

a. The Chief Librarian will be designated as liaison with the Defense Technical Information Center (DTIC) to coordinate submission of reports.

b. The Project Manager/Contractor will prepare DD Form 1473, Report Documentation Page, to be inserted as the first page of the report, in accordance with AR 70-31 and MIL STD 847A.

c. The Project Manager will assign a limitation statement in accordance with AR 70-31, and will indicate the distribution on DD Form 1493.

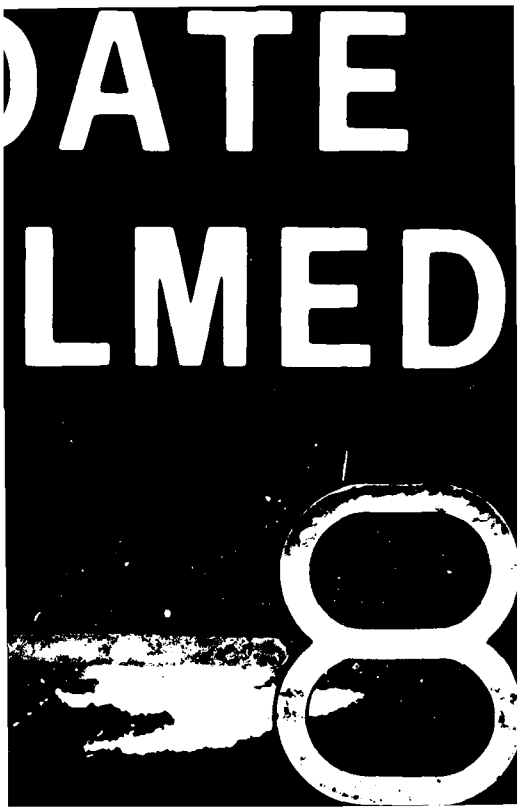
IHIS PROJECT REPORT

d. At the time of publication, the Project Manager/Contractor will send three copies of reports with completed DD1473's to the District Library.

e. After initial distribution and a reasonable time for additional requests, extra copy stockpiles may be disposed of, since additional copies will be available from DTIC in microfiche and hard copy.

FOR THE DISTRICT ENGINEER:

1 Appendix
APP A Completed DD Form 1473
(Sample)


DATE
LMED
8